

WHAT IS CLAIMED IS:

1. An image display device comprising a display section comprised of a plurality of pixels; and a control section which controls said display section,

5        wherein said image display device includes a nonvolatile phase-change type memory device having a memory for image display which is comprised of TFTs.

2. An image display device according to claim 1, wherein each of said plurality of pixels has a function which retains  
10       display data therein.

3. An image display device according to claim 1, wherein said display section is comprised of liquid crystal.

4. An image display device according to claim 1, wherein said display section is comprised of organic light emitting  
15       diodes.

5. An image display device comprising a display section comprised of a plurality of pixels; and a control section which controls said display section,

       wherein said image display device includes a nonvolatile  
20       phase-change type memory device having a memory for image display which is comprised of TFTs, and

       said nonvolatile phase-change type memory device is comprised of at least one variable-resistance memory element and at least one TFT.

25       6. An image display device according to claim 5, wherein

said at least one variable-resistance memory element is comprised of a chalcogenide material containing at least one element of Te, Se and S.

7. An image display device according to claim 5, wherein  
5 said at least one variable-resistance memory element is fabricated by using a lithographic method, and is free from variations in resistance value due to registration errors of masks.

8. An image display device according to claim 5, wherein  
10 said at least one variable-resistance memory element is covered with a material other than Al such that said at least one variable-resistance memory element is not in direct contact with an Al material.

9. An image display device according to claim 5, wherein  
15 said at least one variable-resistance memory element is sandwiched in a direction of a thickness thereof and protected by a plurality of protective films capable of suppressing influences of mobile ions.

10. An image display device according to claim 5, wherein  
20 each of said plurality of pixels has a function which retains display data therein.

11. An image display device according to claim 5, wherein  
said nonvolatile phase-change type memory device is included in said control section, and serves as a frame memory which  
25 retains display data for one frame.

12. An image display device according to claim 5, wherein said display section is comprised of liquid crystal.

13. An image display device according to claim 5, wherein said display section is comprised of organic light emitting  
5 diodes.

14. An image display device according to claim 5, wherein a resistance of said at least one TFT in a conducting state thereof is in a range of from 10 k $\Omega$  to 1,000 k $\Omega$  and a resistance of said at least one variable-resistance memory element in a  
10 high-resistance state thereof is 1,000 k $\Omega$  or more.

15. An image display device according to claim 5, wherein said at least one variable-resistance memory element is disposed in one of a region having an interconnect of circuits and a region which blocks display-producing light.

16. An image display device comprising a display section comprised of a plurality of pixels; and a control section which controls said display section,  
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wherein said image display device includes a nonvolatile phase-change type memory device having a memory for image  
20 display which is comprised of TFTs, and

said nonvolatile phase-change type memory device is comprised of combinations of memory cells,

each of said memory cells is comprised of one variable-resistance memory element and one TFT, and retains  
25 display data represented by one bit or more.

17. An image display device according to claim 16, wherein said at least one variable-resistance memory element is comprised of a chalcogenide material containing at least one element of Te, Se and S.

5        18. An image display device according to claim 16, wherein said at least one variable-resistance memory element is fabricated by using a lithographic method, and is free from variations in resistance value due to registration errors of masks.

10        19. An image display device according to claim 16, wherein said at least one variable-resistance memory element is covered with a material other than Al such that said at least one variable-resistance memory element is not in direct contact with an Al material.

15        20. An image display device according to claim 16, wherein said at least one variable-resistance memory element is sandwiched in a direction of a thickness thereof and protected by a plurality of protective films capable of suppressing influences of mobile ions.

20        21. An image display device according to claim 16, wherein said nonvolatile phase-change type memory device is included in said control section, and serves as a frame memory which retains display data for one frame.

25        22. An image display device according to claim 16, wherein said display section is comprised of liquid crystal.

23. An image display device according to claim 16, wherein said display section is comprised of organic light emitting diodes.

24. An image display device according to claim 16,  
5 wherein a resistance of said at least one TFT in a conducting state thereof is in a range of from 10 k $\Omega$  to 1,000 k $\Omega$  and a resistance of said at least one variable-resistance memory element in a high-resistance state thereof is 1,000 k $\Omega$  or more.

10 25. An image display device according to claim 16, wherein said at least one variable-resistance memory element is disposed in one of a region having an interconnect of circuits and a region which blocks display-producing light.